



## Arsenic in Well Water-Lebanon & Franklin

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Connecticut Department of Energy and Environmental Protection

## Background

- Statewide interest in Arsenic (As) in drinking water
- ECSU sample wells in Lebanon for As
- DEEP contacted by a well owner with elevated As based sampling done by ECSU; DEEP confirms + pesticides
- Sampling effort expanded into Franklin based on results & hydrogeologic setting
- Other State Agencies involved: DPH, USGS, DEEP's Office of the State Geologist; UConn & ECSU



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## Arsenic Impacts to Drinking Water

- Carcinogen-colorless, odorless, tasteless; must test
- As > 10 ug/l or 0.01 mg/l poses an unacceptable risk to human health (ug/l = 1 second in 32 years)
- Bathing/showering (dermal contact) risk > 100 ug/l; only two sites fell into that category
- Levels have ranged from ND to 160 ug/l; most 10-30 ug/l; all other parameters generally excellent
- DPH-Environmental Epidemiology & Occupational Health provides guidance on health risks



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## DEEP's Role

- DEEP's Potable Water Program obligation pursuant to CGS Sec. 22a-471
- Evaluate the occurrence of As in domestic wells on Hoxie, Kahn and Waterman Roads in Lebanon and Franklin
- DEEP assesses whether As is natural or a result of pollution;
  - industrial sources
  - agricultural sources; pesticides or organic leachate



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## Well Construction Details

- Most are modern drilled wells in bedrock
- Private well water quality regulated pursuant state Public Health Code Sec. 19-13-B102
- Bedrock Type on Hoxie and Kahn Road
  - Hebron Formation
  - Lebanon Gabbro
  - Distribution of rock type with regard to well water chemistry



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## Water Treatment Options

- Used test results & evaluation info from NJ Geological Survey
- Anion Exchange Whole House-removes only As5
- Whole house granular ferric adsorption most effective:
  - Removes As3 & 5
  - Easy to operate and maintain
  - As not returned to ground water via backwash
  - Low backwash volume
  - Separate leaching system for backwash
  - Tap cartridges are available for kitchen sink & ice makers
  - [www.adedgetechnologies.com](http://www.adedgetechnologies.com)



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## Contact Information

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- Other helpful contacts:
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